

## INTERNET COOPERATION TREA /

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

DANEKLEV, Ulf  
Dr. Ludwig Brann Patentbyrå AB  
Box 1344  
S-751 43 Uppsala  
SUÈDE

Date of mailing (day/month/year) 09 October 2000 (09.10.00)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference P05028PC00	
International application No. PCT/SE00/00312	International filing date (day/month/year) 16 February 2000 (16.02.00)

1. The following indications appeared on record concerning: <input checked="" type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative		
Name and Address PERSONAL VIEW AB Österängsgatan 1A S-753 26 Uppsala Sweden	State of Nationality SE	State of Residence SE
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence		
Name and Address PERSONAL VIEW AB Box 2086 S-194 02 Upplands Väsby Sweden	State of Nationality SE	State of Residence SE
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to: <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input checked="" type="checkbox"/> the elected Offices concerned <input checked="" type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:		

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

A. Karkachi

# PCT COOPERATION TREATY

**PCT**

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C. 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 09 October 2000 (09.10.00)	
<b>International application No.</b> PCT/SE00/00312	<b>Applicant's or agent's file reference</b> P05028PC00
<b>International filing date (day/month/year)</b> 16 February 2000 (16.02.00)	<b>Priority date (day/month/year)</b> 17 February 1999 (17.02.99)
<b>Applicant</b> ERIKSSON, Klas et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
01 September 2000 (01.09.00)

☐ in a notice effecting later election filed with the International Bureau on:  
\_\_\_\_\_

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	<b>Authorized officer</b>  A. Karkachi  Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 20 JUN 2001

WIPO PCT

14

Applicant's or agent's file reference P05028PC00	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPC/416)	
International application No. PCT/SE00/00312	International filing date ( <i>day month year</i> ) 16.02.2000	Priority date ( <i>day month year</i> ) 17.02.1999
International Patent Classification (IPC) or national classification and IPC7 H04N 7/08, H04N 7/16		
Applicant PERSONAL VIEW AB et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  01.09.2000	Date of completion of this report  07.06.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 40 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer  Antonio Farieta /OGU Telephone No. 08-782 25 00

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00312

**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☐ the international application as originally filed
- ☒ the description:  
pages 1-19 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , as amended (together with any statement) under article 19  
pages \_\_\_\_\_ , filed with the demand  
pages 1-3 , filed with the letter of 01.06.2001
- ☒ the drawings:  
pages 1 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**4. ☐ The amendments have resulted in the cancellation of:**

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00312

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-12</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-12</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-12</u>	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

The claimed invention relates to a system and a method for distributing promotional messages in a cable TV network to different targeted groups provided with a monitor connected to or equipped with a set top box. The invention comprises the steps of:

- inputting a promotional message;
- selecting a target group;
- attaching information, including the set top address, to said promotional message;
- sending said promotional message over said network based on said attached information;
- allocating a portion of said display for said promotional message; and
- outputting said promotional message in the allocated portion of said display at the selected target group.

The following documents were cited in the International Search Report:

D1) EP, A2, 0424648

D2) US, A, 5561708

Document D1 discloses a method and apparatus for providing demographically targeted television commercials. Different commercial messages are broadcast to different demographically targeted audiences in a cable television system or the like. A first television channel contains television programs and periodic commercial messages. A second television channel contains alternate commercial messages. Demographic characteristics of a viewer are identified, and commercial messages are selectively provided from the first or second channel, depending upon the viewer's demographic characteristics. Demographic data can be input by a viewer via a remote control, downloaded to a subscriber's converter from .../...

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V.

1 (2)

a remote headend, or programmed into the converter at installation. Prioritization of the demographic characteristics of a plurality of television viewers watching a program together enables commercials to be targeted to the viewer having highest priority. Statistical data can be maintained concerning the number and identity of subscribers viewing specific commercials.

Document D2 discloses a method and apparatus for interactive television through use of menu windows. An electronic device and method for accessing remote electronic facilities and displaying associated information on a conventional television set. The electronic device self-configures itself upon power-up or reset by initiating a data call to a configuring facility. Information related to available facilities and programming, autonomous mail checking is downloaded to the electronic device. The electronic device displays a menu including several user selectable facilities on the display for a user. The user chooses one of the options from the menu by use of a remote keypad control, similar to a conventional television remote control. The options available include printing, electronic mail and other news and information services. Interfacing the electronic device with a stylus-type pointing device permit sketching and drawing on the television, including superposition of images on captured television images. Captured images of graphics or text are optionally stored or forwarded to a user through a mail facility accessed through operation of the system.

The methods and apparatus that are disclosed in documents D1 and D2 show only the general state of the art of the claimed invention. However, none of these documents discloses any method or arrangement that solve the problems associated with the distribution of promotional messages in a cable TV network to different targeted groups. The inherent variation in length of different promotional messages makes difficult to schedule the promotional messages into the breaks of different television programs and interaction means must be provided in order for the consumer to react upon a certain promotional message. Neither/nor of the cited documents D1 - D2 are concerned with the fact that the claimed invention is a point-to-point system wherein the sending of promotional messages through a network is based on an attaching information that includes the set top box address to said promotional message. The present invention suggest that only the promotional message that is relevant for a specified target group is sent

.../...

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V.

2(2)

through the cable TV network to the relevant set top box, instead of sending all the promotional messages to the set top box as suggested in D1.

Neither/nor of the cited documents D1 - D2, whether considered alone or in combination, suggest a solution according to the present invention as defined in independent claims 1 and 7. Therefore, it can be conclude that a man skilled in the art, being faced with the problems described above and having knowledge of the cited documents, would not know how to modify and/or improve the methods and/or arrangements so that would lead to a method and/or an apparatus, as the one claimed in the present application.

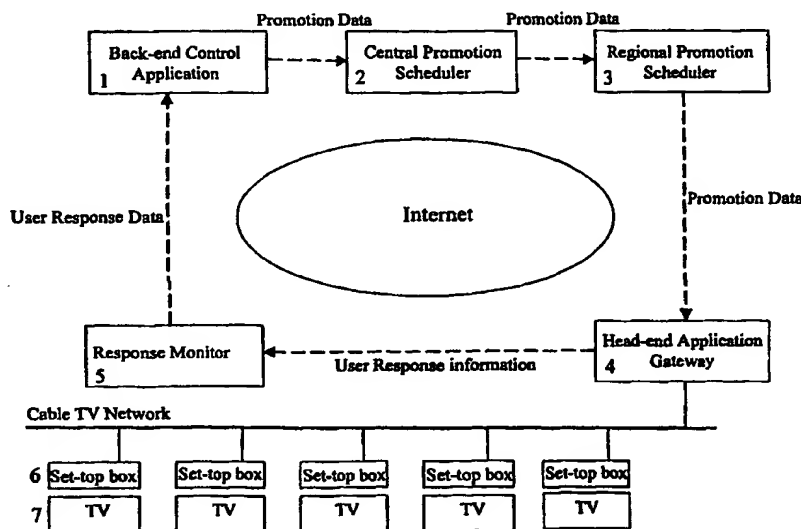
Therefore, the invention according to claims 1-12 is novel (N), is considered to involve an inventive step (IS) and is considered to have industrial applicability (IA).



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>H04N 7/08, 7/16</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/49805</b> <b>(43) International Publication Date:</b> 24 August 2000 (24.08.00)
<b>(21) International Application Number:</b> PCT/SE00/00312 <b>(22) International Filing Date:</b> 16 February 2000 (16.02.00) <b>(30) Priority Data:</b> 9900513-4      17 February 1999 (17.02.99)      SE <b>(71) Applicant (for all designated States except US):</b> PERSONAL VIEW AB [SE/SE]; Österängsgatan 1A, S-753 26 Uppsala (SE). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> ERIKSSON, Klas [SE/SE]; Österängsgatan 1A, S-753 26 Uppsala (SE). SUNDQVIST, David [SE/SE]; Lundby, S-741 95 Knivsta (SE). <b>(74) Agent:</b> DANEKLEV, Ulf; Dr. Ludwig Brann Patentbyrå AB, Box 1344, S-751 43 Uppsala (SE).		<b>(81) Designated States:</b> AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>

**(54) Title:** SYSTEM AND METHOD FOR DISTRIBUTING PROMOTIONAL MESSAGES OVER A COMMUNICATIONS NETWORK

**(57) Abstract**

The present invention provides a direct information channel via a communications network to e.g. households for advertising purposes. In a preferred embodiment of the present invention a method for use in a network for sending promotional messages to target groups provided with a display comprises the steps of inputting a promotional message; selecting a target group; allocating a promotion channel in said network for said promotional message; allocating a portion of said display for said promotion channel; sending said promotional message over said network in said promotion channel; and outputting said promotional message in the allocated portion of said display at the selected target group.



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**TITLE:**

**System and method for distributing promotional messages over a communications network**

**TECHNICAL FIELD OF THE INVENTION**

The present invention relates to a system and method for distributing promotional messages over a communications network and more particularly, to the provision of different promotional messages to different targeted groups e.g. households.

**BACKGROUND OF THE INVENTION**

For many years, television advertising has represented the cornerstone of consumer marketing. The unique combination of sight, sound, and motion offered by television has allowed marketers to build brand equities by persuading consumers that a certain brand is either unique and/or better than its competitors.

Television has been dominated by the broadcast networks, which have offered the best available means of broad reach for advertisers. Prior to the advent of cable television, an advertiser could reach nearly 100% of all homes via broadcasted promotions. However, the world is changing and many homes are wired for cable. These cable systems are effectively replacing on-air broadcast as the actual delivery vehicle for programs. With the anticipated increase in viewing options, efficient delivery of promotional messages to defined target groups through the sale of in-program participation or pre-set time slots on a given channel will become increasingly difficult. Broadcast networks and their affiliates however, still receive

the vast majority of advertiser money. Advertisers believe that placing their promotions in specific programs will ensure that they reach the right kind of viewers while at the same time being aware that simple demographic targeting may be highly wasteful.

Another reason as to why broadcasters receive the majority of advertising revenue is because they continue to attract the largest audiences despite the proliferation of cable channels, which has fragmented the viewing audience. The likelihood that viewers are watching any particular promotional message is reduced by the sheer quantity of channels.

A few attempts have been made in order to remedy the current situation. The U.S. patent 5, 661, 516 entitled "System and method for selectively distributing promotional messages over a communications network" to Carles discloses a system and method for distributing promotional messages to an individually addressable subscriber terminal ("converter") in a network. Promotional messages to be distributed over the network contain embedded information identifying categories of recipients for each message. A server, centrally located on the network, selectively tags promotional messages with the converter addresses of subscribers, satisfying the identifying categories. The promotional messages are then transmitted over the network for receipt and display by a television receiver connected to the addressed converters. The addresses are selected by the server based on information stored in a database related to demographic and other information relating to the household of the subscriber.

Another attempt is disclosed in the U.S. patent 5, 155, 591 entitled "Method and apparatus for providing demographically targeted television commercials" to Wachob. Different promotional messages are broadcast to different demographically targeted audiences in a cable television system or the like. A first television channel contains television programs and periodic promotional messages. A second television channel contains alternate promotional messages. Means are provided for determining when a promotional message break in a particular program channel is about to occur, and selection means based upon the viewer's demographic characteristics are responsive thereto for providing an appropriate promotional message from the first or second channel during the break. After the promotion

break, the converter returns back to the original television program channel. The head-end can transmit a plurality of television program channels each having periodic promotional message breaks, with each television program channel having a corresponding plurality of alternate promotional message channels associated therewith. Demographic data can be input by a viewer via a remote control, downloaded to a subscriber's converter from a remote head-end, or programmed into the converter at installation. Prioritisation of the demographic characteristics of a plurality of television viewers watching a program together enables the promotional messages to be targeted to the viewer having highest priority. With this system the cable system operator, who controls the head-end, is provided with the capability to insert commercials in the promotional break portions of programs carried on the main television program channel, and also for providing a plurality of alternate promotional channels targeted to different demographically defined audiences.

The above mentioned prior art systems still suffer from a number of major drawbacks. First, it is critical to both prior art systems that the promotional messages can be scheduled to fit into the breaks of different television programs. Evidently, a quite comprehensive and intelligent system is required to keep track of all promotional breaks in each program channel, especially in a 500+ channel environment. Throughout the day each promotional message should be inserted at its scheduled time and once the promotional break is over return to the normal program needs to be ensured. In addition, the inherent variation in length of different promotional messages makes the task even more complicated.

Second, although Wachob mentions the possibility for a viewer to input demographic data the prior art systems are so called simplex systems, i.e. there are no consumer interaction means provided in order for the consumer to react upon a certain promotional message currently viewed.

It would therefore be advantageous to provide a method and apparatus for targeting specific promotional advertisements to demographically selected audiences which does not suffer from the above drawbacks.

## SUMMARY OF THE INVENTION

The present invention provides a direct information channel via a communications network to e.g. households for advertising purposes. As set out in the appended claims the invention comprises both a method and a system. In a preferred embodiment of the present invention a method for use in a network for sending promotional messages to target groups provided with a display comprises the steps of

- inputting a promotional message;
  - selecting a target group;
  - allocating a promotion channel in said network for said promotional message;
  - allocating a portion of said display for said promotion channel;
  - sending said promotional message over said network in said promotion channel;
- and
- outputting said promotional message in the allocated portion of said display at the selected target group.

The system of a preferred embodiment for sending promotional messages to target groups provided with a display comprises:

means for inputting a promotional message;

means for selecting a target group;

means for allocating a promotion channel in said network for said promotional message;

means for allocating a portion of said display for said promotion channel;

means for sending said promotional message over said network in said promotion channel; and

means for outputting said promotional message in the allocated portion of said display at the selected target group.

Further details will be found in the claims and the description.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a block diagram of an embodiment of the system in accordance with the invention;

Figure 2 shows an embodiment of a television picture with a promotional banner in accordance with the invention.

## DETAILED DESCRIPTION OF EMBODIMENTS

### SYSTEM OVERVIEW

Figure 1 shows a block diagram of a system in accordance with the invention for distributing promotional messages over a communications network to a display. The dashed lines denotes logical information flow. The physical flow is to/from/within the Internet. As shown in Figure 1 the system comprises a back-end control application 1, a central promotion scheduler 2, a regional promotion scheduler 3, a head-end application gateway 4, a response monitor 5, a set-top box 6 and a display 7. The back-end control application 1 is the main application used in defining which promotional message that should be displayed where, when and how. As will be described in more detail below the back-end control application 1 receives input from a plurality of sources including advertising companies, demographical databases, proprietary customer databases, consumer interest profiles, data from previous campaigns etc. The processing of the above sources results in selection criteria which in turn gives a target group of, e.g., households, a point in time to display the promotional message and, if so desired, an enhanced

promotional message. Thus, each promotional message is provided with target group information, e.g. an Internet address. In this way it can be ensured that advertising companies receive the highest possible value for their money. The output of the back-end control application 1 is fed to the central promotion scheduler 2. The central promotion scheduler 2 comprises the main promotion database where promotional messages and related information obtained from said back-end control application 1 are stored. The central promotion scheduler 2 is also responsible for distributing information to the regional promotion scheduler 3 if so required. The main function of the regional promotion scheduler 3 is to off-load the central promotion scheduler 2 due to the large number of households, time slots and promotional messages that the system needs to handle. To this end the regional promotion scheduler 3 may contain a cache of promotional messages and related information to speed up the distribution of that information for a subset of the households. In particular, the regional promotion scheduler 3 may keep track of when it is time to send a particular promotional message down the network in order for it to arrive in time considering potential bandwidth limitations.

The main function of the head-end application gateway 4 is to act as the interface between the rest of the system and the network and thus with the displays. The head-end application gateway 4 interacts with all set-top boxes 6 within its segment in a promotion channel, which is part of the network. In particular, the head-end application gateway 4 handles the individual addressing of the set top boxes 6 based upon the selected target groups and receives all consumer/viewer interaction. The head-end application gateway 4 may for this purpose investigate each logged on consumer profile, match the profile with the selection criteria and forward the appropriate messages to the respective set-top boxes 6. The main function of the response monitor 5 is to act upon consumer/viewer responses when a promotional message is shown. To this end the set-top box 6 is adapted to detect any consumer/viewer interaction with the promotional message and to forward this event via the head-end application gateway 4 to the response monitor 5 which retrieves e.g. a web page to hand over from the back-end control application 1. It also updates the campaign statistics with the event. The main feature of the set-top box 6 is to handle the user interface and the interaction needed with the consumer. The goal is to create a thin GUI client, connected to a server where the server functionality is split between other applications. The application in the set-top box

6 is denoted the set-top box promo application. It may be tightly connected to the head-end application, which contains the business logic of the user interface.

Although the system has been described to have a central as well as a regional promotion scheduler it is conceivable to merge the two into a single scheduler. It is also evident that the system can comprise any number of central promotion schedulers, regional promotion schedulers and head-end application gateways. Even if the expression households is used above it is evident that the above system may include displays not only located at households but anywhere, e.g. in shops, banks, restaurants, etc.

Each application above may have a connection to Internet, and may use standard communication mechanisms. Preferably, none of the applications has a direct access to any other application. The different "application boxes" denotes functional blocks. The actual location of these blocks can be any server set up to support the system. All, some or none of the boxes could be located in the same server. The reason to divide them here is to separate the functionality on a system level.

#### TIME SLOT

In accordance with the invention the promotion channel is divided into a number of time slots. The duration of each time slot is preferably in the order of minutes. During a time slot, the promotional message controls what is displayed on the television screen portion allocated for the promotion channel. Each household may be handled individually, i.e. different households may have different promotional messages displayed during the same time slot. To be able to show e.g. BMW promotions when a car is displayed in e.g. a James Bond movie would, however, require time slots down to the order of 5 seconds, if the appearance of the promotional message is to be controlled by the time slot mechanism. This would then lead to an unreasonable number of time slots per calendar day and so it is preferred to make the promotional message intelligent so that it can decide itself when during the time slot it is supposed to appear on a particular display.

The head-end application gateway 4 is provided with means for monitoring synchronisation signals. The available sources of these signals vary over time and



the functionality of the application. The application offers a number of services that are made visible to the promotional message through the set-top box application. The sources of synchronisation information includes Video Tape Recorder (VTR) signals at program start provided by the broadcast channel, other synchronisation signals provided by the broadcast channel, e.g. promotion start synchronisation signals.

A plurality of promotional messages that are to be shown during a plurality of time slots may be assembled into a campaign. There may also be more than one promotional message used and each of them may be used during a set of time slots. The promotional messages are sent to a plurality of households that matches the selection criterion that is set up for the campaign. The invention provides for any number of campaigns to be run simultaneously as each campaign makes its own selection of which households to target. Some campaigns may of course overlap, but this is can be handled by the present system.

Since the promotional messages rely on time slots, it is important that most devices in the system/network have the same time, i.e. that all time slots are due at the same time for all households. The demand for accuracy is reduced if the promotional message relies on an external event for synchronisation. For promotional messages not synchronising, they will be relying on a time related to the time slot start.

Different broadcast channel companies are located in different time zones. It is therefore preferable to use an internal time reference that is invariant to the actual location of the set-top box 6. In the US East Standard Time is used and in Europe Greenwich Mean Time, GMT. An advantage of using GMT is that it is not adjusted for daylight savings time. The conversion between GMT and local time is used by the head-end application gateway 4. When defining a campaign local time is normally used as the time base. The back-end control application 1 may transform the time slot specification to GMT. The head-end application 1 is aware of the time zone for e.g. the CATV segment that it is responsible for and converts the time slot information to local time. In the set-top box 6, the promotional message can retrieve local time, GMT and campaign owner time, selected at the campaign set-up. The reason for not using only local time is that it should be possible to use the same

promotional message world-wide, regardless of the actual location of the set-top box 6. On the other hand, the set-top box 6 must know the local time if it should be possible to manage consumer/viewer defined events. Note that different time zones means that the local time differs when a program is sent.

## CONSUMER PROFILE

Consumer/viewer profiles denote a profile of interest. It reflects the "soft" parts of the people currently watching the television. The profile may be the only source of information used by the system to select which viewers to direct promotional messages to. According to the present invention each household is provided with a pre-allocated profile which is set up in advance e.g. when a subscription is made. This initial profile is called the default profile. However, the present invention also features additional profiles, which the viewers can define themselves. The viewers freely select the content of those profiles. This means that different people in a household can define their own profiles reflecting what they are interested in, as well as allowing them to use different profiles at different times of the day. There may be any number of profiles. The user can also update and delete the consumer profiles.

The consumer profiles are stored locally, and the selected profile is sent to the promotion scheduler 2, 3 when selected. If only a default profile exists, the viewer need not specify any profile when switching on the television set since the default profile will be selected automatically by the system. The default profile may also be used after a timeout period, if no profile has been selected. The timeout value may be set to a few seconds, but can be changed by the viewer. The viewer profiles cannot be linked to a particular viewer because of the profile set-up procedure. This is not assumed to be a drawback since the normal situation is that there is more than one person watching the television. The profile that will be used is most likely some approximation of the interests of all the viewers watching within a particular household. Providing multiple profiles allow the viewers to select profiles that more closely match the interests of the persons currently watching. The default profile is also used by the present system when allocating promotional messages for the viewers before any statistics have been collected.

The usage of the profiles defined for a particular consumer is continuously monitored. Since the profiles themselves are stored locally on the set-top box, and the user can edit the profiles locally, the exact content of the profiles are not known until selected to be used by the user. There are also volatile parts of the profile such as current channel selected. The system therefore needs to do some statistical measurements on the usage of the categories within the profiles, to be able to make a forecast of the hit rate when defining a campaign

#### SELECTION OF TARGET GROUP

In accordance with the invention, when a target group of households is to be selected for a campaign, the selection criterion may be composed of information from a plurality of sources comprising:

1. Generally available demographical data, e.g. number of household members and their age. Some of these data can be obtained at the time of subscription; others retrieved from public sources;
2. Proprietary knowledge about the targeted households;
3. Former campaigns results;
4. Consumer profiles;
5. Television channel currently being watched.

Data from the first three sources does not change substantially between the campaign definition and expiration of a time slot and is therefore called non-volatile data. Data from the latter sources, however, does indeed vary within the above time frame and is called volatile data. In fact, the latter data is dependent on the current viewer behaviour and may therefore change rapidly.

#### STATIC

In accordance with the invention, the allocation of time slots can in one embodiment be made statically at campaign set up time. The households and time slots are then allocated during campaign definition by using a selection criterion that is based on the non-volatile data described above.

## DYNAMIC

When the promotional messages of the present invention are to be sent to large populations with several millions of households, the static allocation strategy will have difficulties in coping with the fact that households are added and withdrawn from the subscriber list. If the target groups are selected several weeks in advance, new households will not be covered since they were not a part of the selection when the campaign was set up. Removed households will also affect the performance since there is a probability that households are removed from the selected group. A problem related to the removed households is the fact that some television receivers are not switched on during a particular time slot when a promotional message is dispatched. This will also affect the selected target group for a campaign. Moreover the above described static selection criterion does not take into account that the consumer/viewer may have e.g. selected a consumer profile or watch a particular television channel.

In accordance with the present invention, it is therefore preferred to use a dynamic allocation. By using a dynamic allocation the system describes the target households with a selection criterion that is not executed until the actual time slot is approaching or is due. The criterion can then easily cope with added households since all households matching the criterion will be targeted. One problem with this approach is that the system does not know at campaign set up time exactly how many households that will be targeted.

The process of determining what households should be presented with which promotional message at which time may according to the invention be defined by the following process:

The time slot or slots when a promotional message should be presented is selected. Each time slot may be of equal length. The targeted group of households is selected based on non-volatile consumer data e.g. demographical data. The data is retrieved either from public sources or from invariant/static parts of the consumer profile. The selection criterion within the group is set up and is based on the volatile consumer data e.g. categories of interest that the user has stated in the consumer

profile. The selection criterion is sent out to the head-end application gateway 4, which controls the group of households selected, together with a priority of that selection criterion. The priority may be set by a back-end control application 1 when the selection criterion is defined. For each household and time slot, the selection criterion is added to a priority queue of selection criteria. When the time slot is due, each selection criterion in the queue is tested, with the high priority ones first. When a criterion matches the consumer profile, the associated promotional message is selected to be displayed.

It is of course possible to make the selection centrally, based on the current consumer profile in use, assuming that the same profile is used for a certain time ahead. When the user changes the consumer profile, a new set of promotional messages can be downloaded. However, if the selection criterion is based on current broadcast channel in use, it can be assumed that often the switch is made in the order of minutes, causing a heavy load on the network and too slow response.

In accordance with the invention the following alternate process may be used:

As above the time slot or slots when a promotional message should be presented is selected, the targeted group of households is selected based on non-volatile consumer and the selection criterion within the group is set up and is based on the volatile consumer. Then, however, when the user logs on or changes consumer profile, a notification is sent to the scheduler application 2, 3, which calculates the promotional messages for a period of time ahead, and assuming that the consumer profile is the same. The promotional messages are sent down to the head-end application gateway 4, which forwards the message to the appropriate set-top boxes 6. When the user changes consumer profile, the promotional messages are recalculated, and the new set of messages is sent down to the head-end application gateway 4 for further distribution. The alternate process requires less memory, but will probably consume more bandwidth for the network in total, since a lot of data is wasted when the user changes profiles. The response requirements are also higher, since a lot of traffic is needed when a profile is changed.

Because of the above selection criteria, it is likely that some households will not be targeted for any promotional message during some time slots. This is not an

optimal situation and in order to fill these gaps, selection criteria must be able to contain a condition that allows a promotional message to be displayed if no other one is. Extending this process to allow multiple "background" activities is possible if each background campaign is assigned a priority. If two background campaigns are selected for a household, the one with highest priority will be shown. It is likely that higher priority campaigns cost more.

#### SCREEN ALLOCATION STRATEGY

There are no unused areas of the television screen that can be used for the promotional messages according to the invention. Even without the change from 4:3 to 16:9 format screens, there are many different picture formats used for movies and videos. The number of combinations is large and state of the art television sets also have the ability to resize the screen both vertically and horizontally to allow the user to use the entire screen for the picture. The invention therefore provides the promotional message on top of the television broadcast in a portion of the screen as shown in Figure 1, thus hiding or replacing a portion of the broadcast with the message during fractions of time.

In the preferred embodiment shown in Figure 2 and according to the present invention the promotional message is shown as a banner 8, 9 close to the screen border. The banners 8, 9 are located at the upper and left borders of the screen, respectively, since those areas seem to contain the least information. In the lower parts, the text strips normally appear, and in the top right corner the broadcast channel information is shown, which makes these two borders less useful. The banners 8, 9 are shown as thin rectangular stripes, Nevertheless, if so desired said banner 8, 9 can be expanded to any suitable size and shape and/or be located at any suitable location within the screen.

The information channel consequently is always available independent of which television channel a consumer/viewer has selected. In addition and as shown in Figure 2, the new information channel requires only a small amount of the television screen to be allocated during short intervals for the promotional messages to be shown in an optimal way.

## INTERACTION

According to a particular feature of the present invention there are provided pre-allocated interaction buttons 10, 11, 12 within the promotional message. In the preferred embodiment these interaction buttons are shown to be located in the corners of the television screen but, of course, these interaction buttons 10, 11, 12 can be placed anywhere on the screen. Their usage is modal e.g. their usage depends on the needs from the banners. From an esthetical point of view, the banners 8, 9 including the interaction buttons 10, 11, 12 could cover the entire border. The upper banner 8 contains the promotional message of the present campaign. The left banner 9 is allocated for services requested by the user, e.g. scheduled alerts. The upper interaction buttons 10, 11 are allocated for the promotional message, and the lower 12 for usage related to user requested services.

The user interacts with the TV set-top box application by using a standard remote control, with enhanced functionality to also control a cursor on the TV screen.

The interaction with the interaction buttons 10, 11, 12 is monitored by the system, preferably by the set-top box 6, and stored centrally for statistical purposes and for analysis of the outcome of a campaign. Preferably, the promotional message is removed from the screen when any of the buttons is selected. The number of buttons, what actions they are supposed to carry out etc. is defined at campaign set up. In a preferred embodiment one of the upper interaction buttons 10, 11 can be used for a "more" or "order" request and the other 10, 11 for a "quit" request. The number of "order" button clicks then reflects the success of the campaign, i.e. the number of consumers/viewers that have actually interacted with the promotional message. The consumer responses are collected for each campaign, and a campaign report is generated.

Normally the button is a link to a Web page. The button itself is however not displayed under the control of any browser. Instead, a promo application has control of the buttons, and can therefore collect the user responses on the campaign. When defining the campaign, the link to the Web page is defined. When

selected, the control of the television screen is handed over to some browser, that is a part of the set-top box standard functionality.

The sum of "order" and "quit" gives the least number of television receivers at which a particular promotional message actually has been watched by a consumer/viewer. If a consumer/viewer interacts with a promotional message, a verified hit has occurred. Otherwise, if the television is on but the user did not act on it, a non-verified hit has occurred.

It is preferable to keep the number of promotional messages at a reasonably low level since the used portion and the frequency of messages are a trade off between consumer expectations and business needs.

## SPECIAL FEATURES

In accordance with the present invention a launch panel can be brought up on the television screen by e.g. a button on the set-top box's 6 remote control. The launch panel is mainly a menu of applications that it is possible to execute. The launch panel can be a part of the standard application in the set-top box 6, with added functionality according to the invention for interaction with the promotional messages. The add-ins provided by the present invention can comprise management of consumer profiles, starting a web browser, downloading electronic coupons, retrieval of promotional messages, management of user defined services, such as alerts.

The features of the web browser available from the launch panel are defined by the browser application. The history of visited pages can be stored in a history list. A cache of pages can be stored locally in the set-top box 6. This can be administered by the browser application, which can be a part of the standard feature set in the set-top box 6. Each shown promotional message may be stored locally, and may be recalled from the launch panel. In addition, subcategories as well as overview of the promotional messages can be made available and promotional messages involving coupons can be re-run. The viewer can request the system to survey coupons during non-watching hours. They can be retrieved later from the history. This feature will increase the incitement for the consumer to use the consumer profile



concept. The history list of the browser can be separated from the history list of promotional messages since these are managed by separated applications. This makes it easier to include a third party browser into the system. The consumer profiles may be password protected. The content of the history list of promotional messages, preferably, does not contain entries from other consumer profiles that are password protected. The content of the history list in the browser, as well as what pages are possible to view, can be restricted by the mechanisms available in the browser. The promotional message may display an offer that the consumer may acknowledge. In this case, an electronic coupon is offered that can be loaded into a smart card that is used together with the application. The coupons are stored in a personal coupon basket, which coupons upon command from the consumer can be loaded into a smart card, for later use in the store or the like. The set-top box 6 can provide the means for using a smart card, which can be used for the following purposes:

- Identification of the household. Using a smart card makes it possible to download all subscription data. When starting the set-top box the first time or power on, the smart card can be used to identify the household.
- Management of electronic coupons. The card can hold a coupon basket with electronic coupons that is later used in the stores.
- Identification of consumer profile. The identification can include household identification as well as profile information. This information can be used when the consumer is not at home, but wishes to use the fine-tuned favourite profile and the personalised user defined services. The later feature can e.g. be used by businessmen on travel, and in a hotel room he can identify himself and then get the personalised settings.

## USE CASES

In order to more fully appreciate the present invention a number of so called use cases will be illustrated below including target consumer profile, promo when in television, block/enhance television promotion, test campaign and consumer requested information. For each use case the following applies:

1. A time slot is selected based on a criterion specific for the use case.
2. A group of households is selected based on a demographical data, proprietary customer knowledge, and/or the consumer profile.
3. A selection criterion based on the consumer profile is set up for the group

#### TARGET CONSUMER PROFILE

Targeted promotions for different consumer groups e.g. diaper promotion to be generated to customer households with small children, bank loan promotion to be generated to households with low income. The time slot when the promotional message should be displayed might not be as critical as in the subsequent use cases. It is probably not a matter within seconds to display a certain message. Here is rather a time period more appropriate. The selection criterion for the households is based on what consumer group the promotion is directed to.

#### PROMO WHEN IN TELEVISION

Although the present invention provides a method for displaying promotional messages independent of which channel a viewer is currently watching and which are not linked to the traditional promotional breaks, it may be desirable to be able to show e.g. BMW promotions when the car is displayed on the television screen. To this end the time slot when the promotional message should be displayed is calculated based on the start time of the program or movie. The selection criterion for the households is based on the selected television channel and e.g. income. This use case assumes that the system knows what television channel is currently selected by the consumer, i.e. that the selection criterion can act on the consumer profile.

#### BLOCK/ENHANCE TELEVISION PROMOTION

Blocking/enhancing promotion to be displayed in connection to competing/same promotion in the television channel. The time slot when the promotional message should be displayed is based on the time the promotion is sent on the channel. The selection criterion for the households is based on what consumer group the

promotion is directed to and the television channel selected. This use case assumes the system knows what television channel is currently selected by the consumer, i.e. that the selection criterion can act on the consumer profile. From a technical standpoint, this use case is the same as "promo when in television". It synchronises the promotional message to an external event from the promotional message point of view.

## TEST CAMPAIGN

Two different targeted promotions are used and sent to two equally generated consumer groups. The consumer response (hit rate, interest rate, buy request rate) are collected and a report generated on the response characteristics on each campaign. The time slot when the promotional message should be displayed might not be as important from the selection criterion point of view. On the other hand, the two groups must have their messages at the same time to allow the results to be comparable. The selection criterion for the households needs to be made in a way that allows the forecast algorithm to determine that the two groups are of equal size and contents. It should be noted that the system can never assure that the two groups are exactly equal, even if they are from a selection point of view, since the television set might not be on at the time of the promotional message. If only non-volatile data is used for the selection criterion, the forecast will be more accurate. It will be up to those defining the campaign to decide how much uncertainty can be accepted.

## CONSUMER REQUESTED INFORMATION

This use case differs in that it does not contain any promotion to be presented to the consumer. Instead, the user has requested some information to be displayed in the same way as the promotions. It can be e.g. an alert when a television program starts on another television channel. This use case differs significantly from the other. In this case, there must be applications available somewhere that implements e.g. a calendar function. When certain events occur, the applications send out a "promotion" to the television. This "promotion" needs to be shown somewhere else than the ordinary promotions.

Although the invention has been described in connection with a preferred embodiment thereof, those skilled in the art will appreciate that numerous adaptations and modifications may be made thereto without departing from the scope of the invention, as set forth in the appended claims.

## CLAIMS:

1. A method for use in a network for sending promotional messages to target groups provided with a display comprising the steps of

- inputting a promotional message;
- selecting a target group;
- allocating a promotion channel in said network for said promotional message;
- allocating a portion of said display for said promotion channel;
- sending said promotional message over said network in said promotion channel;
- and
- outputting said promotional message in the allocated portion of said display at the selected target group.

2. The method of claim 1 further comprising the steps of

- dividing said promotion channel into a number of time slots; and
- allocating said promotional message to a time slot.

3. The method of any of the previous claims further comprising the steps of

- identifying non targeted groups;
- selecting a background promotional message for said non-targeted groups.

4. The method of any of the previous claims further comprising the steps of

- providing interaction means at said display associated with said promotional message;
- registering any user interaction with said interaction means.

5. The method of any of the previous claims further comprising the steps of

- selecting a target group;
- outputting a first promotional message to a first subgroup of said target group;
- outputting a second promotional message to a second subgroup of said target group;
- collecting consumer responses from said first and second subgroups .

6. The method of any of the previous claims comprising the steps of

- selecting said target group based upon non-volatile and volatile data;.

7. A system for use in a network for sending promotional messages to target groups provided with a display comprising

- means for inputting a promotional message;
- means for selecting a target group;
- means for allocating a promotion channel in said network for said promotional message;
- means for allocating a portion of said display for said promotion channel;

- means for sending said promotional message over said network in said promotion channel; and
- means for outputting said promotional message in the allocated portion of said display at the selected target group.

8. The system of claim 1 further comprising

- means for dividing said promotion channel into a number of time slots; and
- means for allocating said promotional message to a time slot.

9. The system of any of the previous claims further comprising

- means for identifying non-targeted groups;
- means for selecting a background promotional message for said non-targeted groups.

10. The system of any of the previous claims further comprising

- interaction means at said display associated with said promotional message;
- means for registering any user interaction with said interaction means.

11. The system of any of the previous claims further comprising

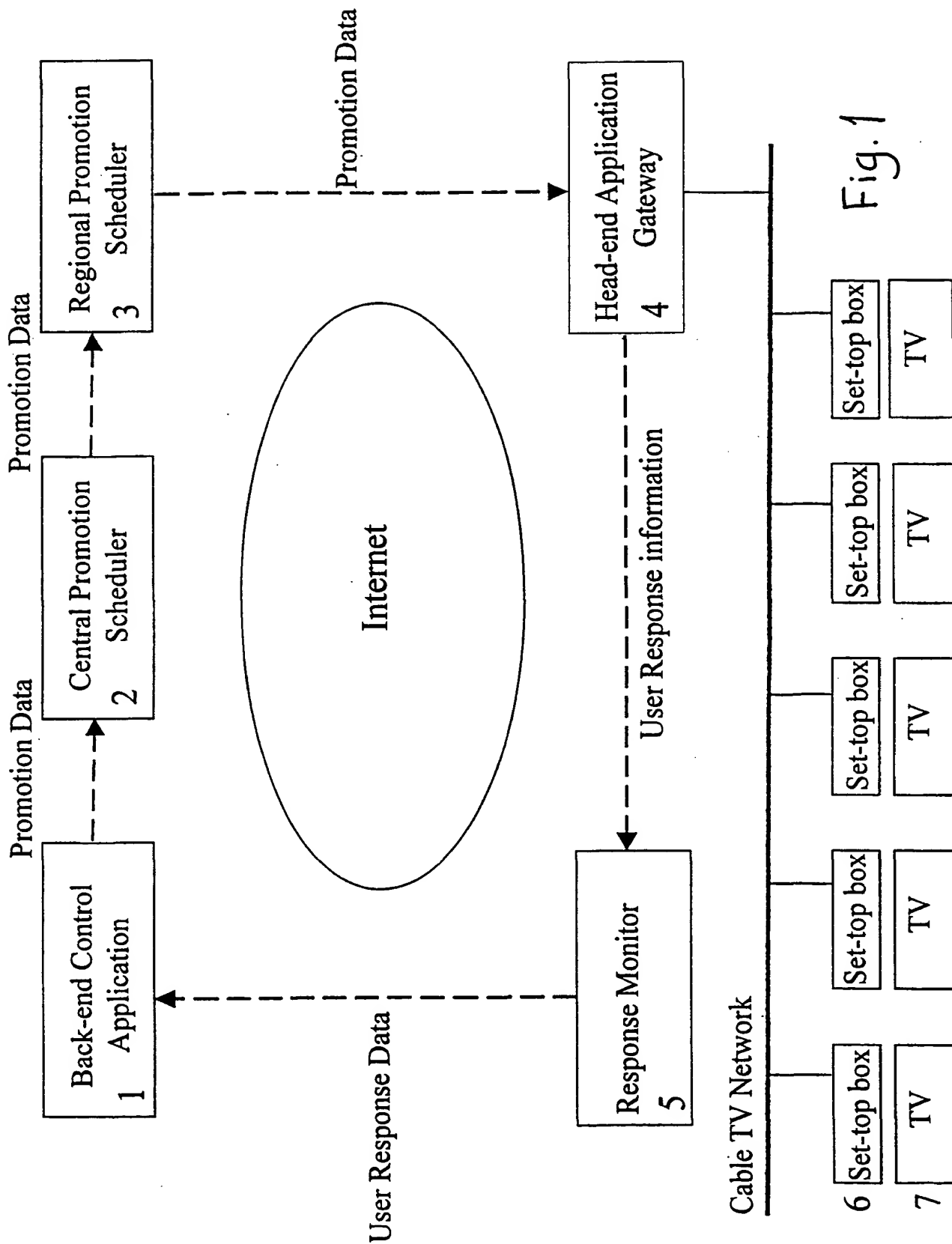
- means for selecting a target group;

- means for outputting a first promotional message to a first subgroup of said target group;
- means for outputting a second promotional message to a second subgroup of said target group;
- means for collecting consumer responses from said first and second subgroups.

12. The system of any of the previous claims further comprising

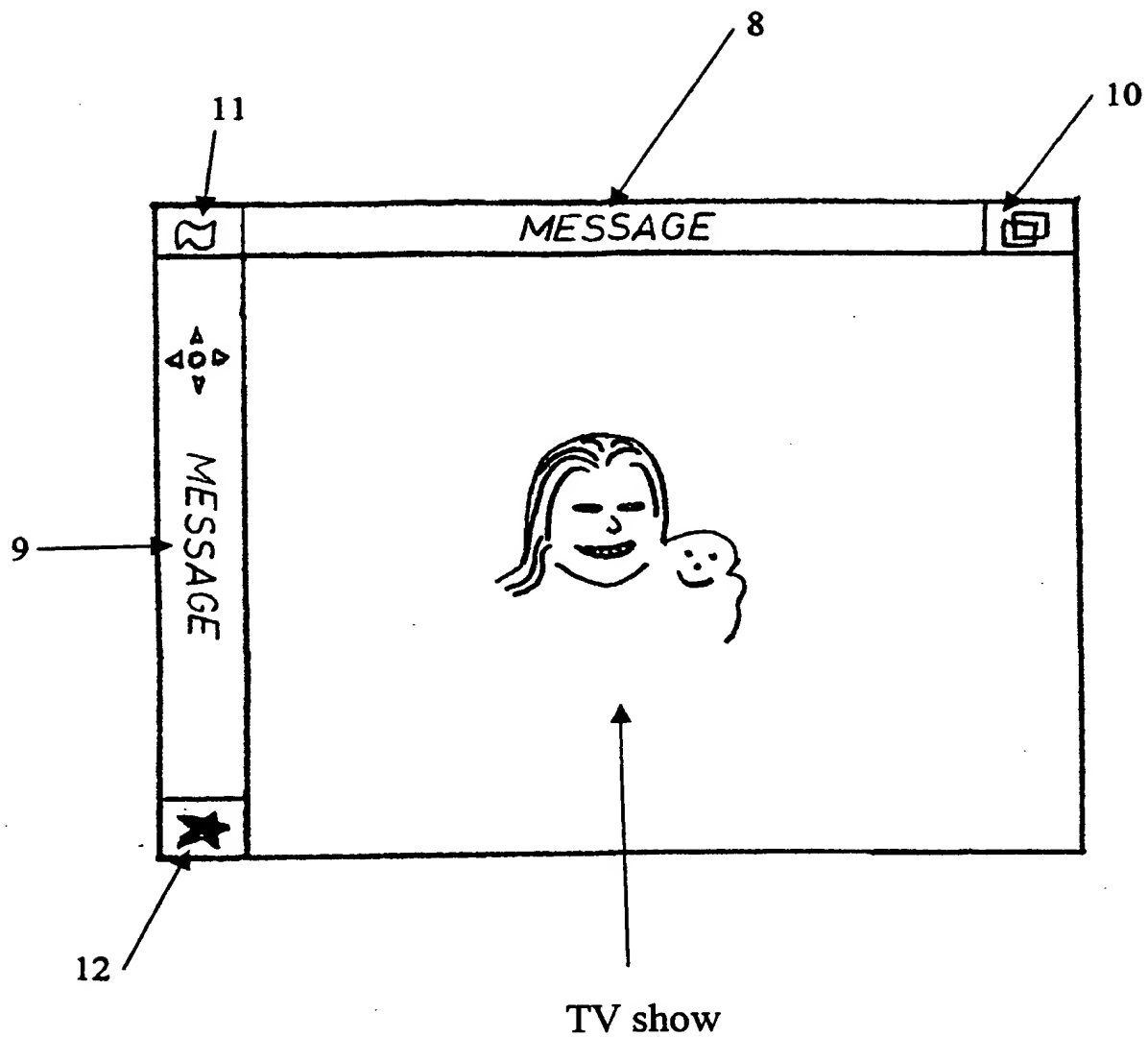
- means for selecting said target group based upon non-volatile and volatile data.





2/2

Fig. 2



# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/SE 00/00312

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04N 7/08, H04N 7/16  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0424648 A2 (GENERAL INSTRUMENT CORPORATION), 2 May 1991 (02.05.91), column 1, line 41 - column 4, line 55; column 5, line 29 - line 39 --	1-12
Y	US 5561708 A (ROGER REMILLARD), 1 October 1996 (01.10.96), column 2, line 8 - column 4, line 33, figure 4 -----	1-12

☐

Further documents are listed in the continuation of Box C.

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See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 May 2000

Date of mailing of the international search report

18-05-2000

Name and mailing address of the ISA/

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/SE 00/00312

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0424648 A2	02/05/91	SE 0424648 T3	
		CA 2024868 A	24/04/91
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		DK 424648 T	21/10/96
		HK 1008412 A	00/00/00
		US 5155591 A	13/10/92
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US 5561708 A	01/10/96	US 5404393 A	04/04/95
		US 5504519 A	02/04/96
		AU 2861192 A	03/05/93
		US 5396546 A	07/03/95
		US 5461667 A	24/10/95
		US 5490208 A	06/02/96
		US 5561709 A	01/10/96
		WO 9307713 A	15/04/93
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CLAIMS:

1. A method for use in a network for sending promotional messages to target groups provided with a display comprising the steps of

- inputting a promotional message;
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- allocating a promotion channel in said network for said promotional message;
- allocating a portion of said display for said promotion channel;
- sending said promotional message over said network in said promotion channel;
- and
- outputting said promotional message in the allocated portion of said display at the selected target group.

2. The method of claim 1 further comprising the steps of

- dividing said promotion channel into a number of time slots; and
- allocating said promotional message to a time slot.

3. The method of any of the previous claims further comprising the steps of

- identifying non targeted groups;
- selecting a background promotional message for said non-targeted groups.

4. The method of any of the previous claims further comprising the steps of

- providing interaction means at said display associated with said promotional message;
- registering any user interaction with said interaction means.

5. The method of any of the previous claims further comprising the steps of

- selecting a target group;
- outputting a first promotional message to a first subgroup of said target group;
- outputting a second promotional message to a second subgroup of said target group;
- collecting consumer responses from said first and second subgroups .

6. The method of any of the previous claims comprising the steps of

- selecting said target group based upon non-volatile and volatile data;.

7. A system for use in a network for sending promotional messages to target groups provided with a display comprising

- means for inputting a promotional message;
- means for selecting a target group;
- means for allocating a promotion channel in said network for said promotional message;
- means for allocating a portion of said display for said promotion channel;

- means for sending said promotional message over said network in said promotion channel; and
- means for outputting said promotional message in the allocated portion of said display at the selected target group.

8. The system of claim 1 further comprising

- means for dividing said promotion channel into a number of time slots; and
- means for allocating said promotional message to a time slot.

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- means for outputting a second promotional message to a second subgroup of said target group;
- means for collecting consumer responses from said first and second subgroups.

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